

Peterborough Pupil Multipliers – Summary Technical Paper. October 2020

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1. Background

- 1.1 In order to plan education provision for new housing developments, the County Council's Research Team provides forecasts of pupil numbers. The **multipliers** used to calculate demand for school places from children living within new developments underpin these forecasts. The forecasts then form the basis for either negotiation with developers as part of a S106 agreement, to support the Council's case for its infrastructure requirements to be funded via the Community Infrastructure Levy (CIL), or for bids into DfE capital funds. This process is consistent with DfE Guidance¹ that states "*Pupil yield factors should be based on up-to-date evidence from recent housing developments*".
- 1.2 In larger developments the number of school places required may necessitate provision of new schools and sufficient land to accommodate buildings and outdoor space. These requirements feed into the planning process. Given the importance of the multipliers in the planning of the provision of new communities, it is important that they are considered by elected members and this, in turn, lends weight to the Council's case whenever it is negotiating with developers for multi-million pound contributions for education.

2. Methodology

- 2.2 Forecasting the number of children that will live in a new development is a complex evidence led process. The County Council's Research Team has a developed methodology over many years, based on:
- Analysis of NHS Child Health (CHIS) data;
 - Analysis of administrative data such as the PLASC (Census of school pupils);
 - Local surveys of new developments;
 - Whole population analysis such as local population estimates, where relevant the Census and GP registrations;
- This data is then applied to a selection of recent case studies for new developments in the area. In this case The Hamptons (post 2010 build), Cardea / Stanground South and Paston.
- 2.3 Together, these sources indicate the average number of children that might reasonably be expected in individual properties, depending on the number of bedrooms and tenure. However, it should be noted that while some key variables e.g. dwelling size and tenure mix can be factored into forecasts, there remain many intangibles to do with location

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909908/Developer_Contributions_Guidance_update_Nov2019.pdf

and design, the state of the housing market and government policy that affect the types of people and households attracted to an individual development.

- 2.4 For this paper the Research Team have carried out three new development surveys to gather further data.

Table One: Details of New Developments Survey, 2020.

	The Hamptons (Dwellings built since 2010)	Cardea / Stanground South	Paston	Total Peterborough 2020 surveys
Number of surveys mailed to households	2,065	1,439	562	4,066
Number of responses*	443	249	90	782
Response rate %	21.5%	17.3%	16.0%	19.2%
% of surveys sent to affordable homes	19%	19%	30%	21%
% of surveys received from affordable	11%	10%	24%	12%

* note that surveys were mailed a total of three times to non-respondents.

- 2.5 A total of 782, responses were achieved. Enough to understand the pupil yield compared to the characteristics of bedroom size and tenure. Further desk based work considered these results in light of the differing ages of the developments and consistency with previous survey results from areas of Cambridgeshire (Loves Farm, Cambridge Southern Fringe).

2.6 **The age of the sites chosen as case studies for this work is particularly relevant.**

- The Hamptons (dwellings completed since 2010). The peak of build completion for the dwellings surveyed was between the years 2010 to 2016 when an average of 165 dwellings were completed each year. This was between **four to ten years ago** making the Hamptons survey a particularly good exemplar for understanding the peak in primary age children as well as the beginning of secondary education.

- Stanground South / Cardea. The peak of the build completion was for the years 2013 to 2016 when an average of 267 dwellings were completed each year. This was between **seven to four years ago** making this survey an exemplar for the demand in early years / Key stage one.

- Paston. The site is smaller than the other two with a lower build rate of fifty dwellings per year (except 196 built in 2015/16); start was in 2008/09. The absence of a peak in build means that this is a useful bench mark for building a more detailed trajectory model.

3 Results

Table Two: Child Health Information System (CHIS) Analysis, 2019 Download.

Age group	The Hamptons (Dwellings built since 2010)	Cardea / Stanground South	Paston	
0 – 1	124	90	42	
1 – 2	116	94	34	
2 – 3	160	82	28	
3 – 4	148	87	34	
Total	548	353	138	
Dwellings	2065	1439	562	Average
Rate per 100 dwellings	26.54	24.53	24.56	25.2

Table Three: Results of PLASC Analysis, 2020.

School Year	Age Group	The Hamptons (Dwellings built since 2010)	Cardea / Stanground South	Paston	
R	4 – 10	116	102	37	
1		141	78	28	
2		146	94	42	
3		128	89	33	
4		114	90	28	
5		131	81	31	
6		140	61	30	
7	11 - 15	155	46	22	
8		121	40	23	
9		132	38	18	
10		109	40	15	
11		79	41	9	
12	16 - 17	51	14	5	
13		35	9	7	
Grand Total		1598	823	328	Total
					2749
	4 – 10	916	595	229	1740
	11 – 15	596	205	87	888
	16 – 17	86	23	12	121
	<i>Dwellings in study</i>	2065	1439	562	4066
	Ratio, per 100, 4 – 10	44.4	41.3	40.7	42.8
	Ratio, per 100, 11 – 15	28.9	14.2	15.5	21.8
	Ratio, per 100, 16 – 17	4.2	1.6	2.1	3.0

- 3.1 The results of the new development survey yielded different results compared to the administrative data above. This is because of the element of 'skew' introduced when people decide whether or not to respond. In particular, the response from affordable (social rented) housing was very low. This is discussed in more detail in the conclusions.

Table Four: Ratio of children per 100 dwellings, New Development Survey 2020

	Pre-school (0-3 years)	Primary school (4-10 years)	Secondary school (11-15 years)
The Hamptons	17	41	24
Cardea / Stanground South	20	29	20
Paston	18	31	16

**Table Five: Ratio of children per 100 dwellings, New Development Survey 2020
Number of Bedrooms and Tenure, all, sites.**

	Pre-school (0-3 years)	Primary school (4-10 years)	Secondary school (11-15 years)
Owner occupied			
2 bedrooms	8.6	8.6	5.7
3 bedrooms	16.4	20.0	10.2
4 or more bedrooms	22.5	55.6	31.7
Private rented			
2 bedrooms	14.3	23.8	
3 bedrooms	16.7	41.7	41.7
4 or more bedrooms	6.7	33.3	40.0
Social rented			
2 bedrooms	15.0	45.0	35.0
3 bedrooms	35.3	100.0	88.2
4 or more bedrooms	Insufficient response		
Intermediate tenures			
2 bedrooms	8.7	4.3	0.0
3 bedrooms	20.0	25.0	20.0
4 or more bedrooms	60.0	40.0	20.0
All			
2 bedrooms	10.4	15.7	8.2
3 bedrooms	17.9	26.3	17.2
4 or more bedrooms	22.1	53.6	32.4
All	18.0	35.7	21.8

4 Conclusions

The Basic Multiplier - Comparison

- 4.1 The Peterborough CHIS and PLASC data analysis is consistent with the multipliers that have been previously adopted by Cambridgeshire County Council.

- Children aged 0 – 3, 20 to 30 children per 100 dwellings; compared to an average of 25.2 found in Peterborough new developments
- Children aged 4 – 10, 30 to 40 children per 100 dwellings; compared to an average of 42.8 found in Peterborough new developments.
- Children aged 11 – 15, 18 to 25 children per 100 dwellings; compared to an average of 21.8 found in Peterborough new developments.

It should be noted that the adoption of the Cambridgeshire multipliers was based on a rigorous longitudinal study of child yields from new developments.

The adoption of a range compared to a single figure enables the council and developers to reflect on the individual nature of each development during negotiations allow both parties to exchange information about the development and reach agreement.

- 4.2 There are similarities with other areas where sufficiently robust research has been carried out. Gloucestershire² research concluded with adoption of the following policy *“GCC is currently using the updated pupil yields supported by two studies in 2018 and 2019. The updated pupil product ratios for new housing are; 30 pre-school children, 41 primary pupils, 20 secondary pupils and 11 post-16 pupils per 100 dwellings.”* Other studies (Northants, Milton Keynes) provide a ‘snap shot’ in time, identifying high demand for early years places (32 to 36 per 100), which projected forward to primary demand (4 – 10s) would equate to approximately 38 – 43 pupils per 100.
- 4.3 Given the timing of the study compared to the age of the new developments data regarding early years (0-3) and primary (4-10) can be converted straight into recommended multipliers. For secondary, the data collected needs to be projected forward³, this gives a recommended figure somewhat higher than Cambridgeshire but consistent with the high numbers of secondary aged children seen in social housing in particular.

Basic Multipliers - Recommendation

- Children aged 0 – 3, 20 to 30 children per 100 dwellings
- Children aged 4 – 10, 35 to 45 children per 100 dwellings
- Children aged 11 – 15, 23 to 33 children per 100 dwellings

The Detailed Multipliers

- 4.4 During planning for education provision on new developments there is the requirement for more detailed modelling as information on tenure and house / bedroom size becomes available. The data from the new development surveys supports this work albeit through a process of controlling to the parameters set by the PLASC analysis

² <https://www.gloucestershire.gov.uk/planning-and-environment/planning-policy/gloucestershire-local-developer-guide-infrastructure-and-services-with-new-development/>

³ Projection shows a future average secondary year group of 140 for The Hamptons (34 per 100), 80 for Stanground South / Cardea (28 per 100) and 30 for Paston (27 per 100).

above and to a model of a 'typical' Peterborough new development. The headline findings from the surveys are as follows:

- the number of children living in a dwelling increases with the number of bedrooms but not all bedrooms are occupied by children; many bedrooms in market housing are retained as spare space / alternative space;

- significantly more children are found, per bedroom, living in social housing compared to market housing;

- the children living within social rented homes in Peterborough new developments have an older age range compared to market housing;

Taking these issues into account the model for detailed multipliers on the following page can be generated.

Special School Places

4.5 DfE guidance states specifically that it is not necessary to produce pupil yields for SEN that differentiate between complexity of condition. To *"determine the need for SEN provision, pupil yield data should identify the number of pupils/learners within recent local housing developments who attend special schools, pupil referral units or alternative provision, SEN units and resourced provision within mainstream schools. It is reasonable and fair to seek developer contributions for SEN provision in direct proportion to the needs arising from planned housing development, applying the same principle to SEN provision as to mainstream"*.

4.6 The analysis of the PLASC data shows that approximately 2.8% of children in the new developments have an EHCP at present (1.6% within special school / PRU); this is lower than the national average of 3.3%. The reason for this difference would be the relatively young age range of the cohort being studied (more will receive EHCPs as they move through education) as well as new developments not exhibiting some aspects of deprivation and diversity found within the general population at the earlier stages of building. It is recommended that PCC adopt the national 3.3% for these reasons.

Sixth Form / College Places

4.7 At the present time there is considered to be sufficient places in the current Peterborough Sixth form / college system to meet future demand. The market for sixth form / college places works differently compared to mainstream school places with young people able to travel far greater distances to access provision. There is also a wider 'market' in operation with specialist courses and subjects on offer therefore it is much harder to justify developer contributions for a specific locality.

Detailed Multiplier Model

INPUTS

Dwellings		100	
Multiplier		Low	High
	0-3s	0.2	0.3
	4-10s	0.35	0.45
	11-15s	0.23	0.33

		Tenure	
		Market	Social
Tenure split		0.7	0.3
Multiplier	0-3s	0.25	0.25
	4-10s	0.34	0.55
	11-15s	0.23	0.4

		Tenure	
Bedrooms		Market	Social
1 bed		0	1
2 bed		8	11
3 bed		26	14
4+ bed		35	5

0-3s		Tenure	
		Market	Social
Multiplier	1 bed	0.00	0.00
	2 bed	0.10	0.20
	3 bed	0.25	0.28
	4+ bed	0.28	0.40

4-10s		Tenure	
		Market	Social
Multiplier	1 bed	0.00	0.00
	2 bed	0.08	0.20
	3 bed	0.20	0.55
	4+ bed	0.55	1.00

11-15s		Tenure	
		Market	Social
Multiplier	1 bed	0.00	0.00
	2 bed	0.00	0.20
	3 bed	0.20	0.35
	4+ bed	0.30	1.00

OUTPUTS

	Low	High
0-3s	20	30
4-10s	35	45
11-15s	23	33

	Market	Social
0-3s	17.5	7.5
4-10s	23.8	16.5
11-15s	16.1	12.0

	Market	Social	Total
0-3s	0.0	0.0	0.0
0-3s	0.8	2.2	3.0
0-3s	6.5	3.9	10.4
0-3s	9.8	2.0	11.8
	17.1	8.1	25.22

	Market	Social	Total
4-10s	0.0	0.0	0.0
4-10s	0.6	2.2	2.8
4-10s	5.2	7.7	12.9
4-10s	19.3	5.0	24.3
	25.1	14.9	40.0

	Market	Social	Total
11-15s	0.0	0.0	0.0
11-15s	0.0	2.2	2.2
11-15s	5.2	4.9	10.1
11-15s	10.5	5.0	15.5
	15.7	12.1	27.8

Summary of Multiplier Model

	Age Group	Tenure	
		Market	Social
<i>Children per 100 dwellings</i>	0-3s	25	25
	4-10s	34	55
	11-15s	18	51